

MAY 05 1989

StarEnterprise



303 Fellowship Road
CS-18
Moorestown NJ 08057
609 778 1400

May 3, 1989

Mr. Cedric Sanborn
Management Section
Hazardous Materials Unit
Agency of Natural Resources
103 South Main Street
Waterbury, Vermont 05676

Re: Environmental Incident
Your Ref. 1272 Order No. 7-8811
White River Texaco Service Station
I-91 & Route 5
White River Junction, Vermont
CEA Ref. File #2724-88

Dear Mr. Sanborn:

On behalf of Texaco Refining and Marketing Inc., we are writing in reference to the above location and remediation activities currently being undertaken. As a result of recent monitoring of the site's recovery and monitoring wells and Star Enterprise and Corporate Environmental Advisors' understanding of the State's position concerning cleanup of the site, a request is being made to end remediation activities at the White River Junction service station.

Enclosed is a "Closure Report" supporting this request. We would appreciate your earliest review and decision on this matter as soon as possible. Thank you.

If you have any questions, please contact Mr. Howard E. Phillips at 609/866-3253.

Very truly yours,

STAR ENTERPRISE

JOHN F. LOVE
SUPERVISOR - OPERATIONS

HEP/jp

Enclosure

cc: Mr. Richard Spiese
Hazardous Materials Division

32-070/7

CLOSURE REPORT
TEXACO SERVICE STATION
ROUTE 5
WHITE RIVER JCT, VERMONT

PREPARED BY
CORPORATE ENVIRONMENTAL ADVISORS, INCORPORATED
453 Center Street
Ludlow, MA 01056

Date: April 27, 1989
CEA Ref. File #2724-88



SECTION 1.0 SITE LOCATION & OWNERSHIP

1.1 Site Location

The subject property, White River Texaco, is located along U.S. Route 5 in a commercially-zoned area of White River Junction, Vermont (figure 1). Local access is via U.S. Route 5 which intersects with Interstate 91 at Exit 11.

The study area is found within the Hanover, New Hampshire-Vermont, 7.5 Minute Quadrangle, published by the U.S. Geological Survey.

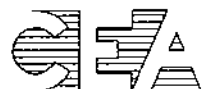
1.2 Site Ownership

According to the White River Junction, Vermont, Assessor's Office, the site is currently owned by Richard Charland and Phillip Poirier. The underground storage tanks, which were removed, were owned by Texaco Refining & Marketing, Inc., P.O. Box 4582, Atlanta, Georgia 30302.

SECTION 2.0 SITE DESCRIPTION

2.1 Site Layout

The site is located on U.S. Route 5 directly west of the interchange of Interstate 91 and Interstate 89. The property is a rectangular parcel covering 0.70 acres with approximately



220 feet of frontage (figure 2). U.S. Route 5 is a heavy duty, two-lane bituminous roadway exhibiting heavy traffic flow.

2.2 Site Usage and Surrounding Land Usage

The property currently has a Texaco service station consisting of a station building, pump islands and canopies. The station also serves as a convenience store.

The site is bordered on the north by U.S. Route 5 and property owned by the Veteran's Administration Hospital. A piano store and bakery abut the southern site boundary. The eastern and western property perimeters are bordered by a Howard Johnson's Motel and Swiss Chalet Motel, respectively.

2.3 Environmental Characteristics

The study area is a level parcel with an elevation of approximately 580 feet above mean sea level (U.S. Geological Survey, Hanover, N.H.-Vermont Quadrangle, N4337.5-W7215/7.5). The site is covered with bituminous pavement, with the exception of the area proximal to the remediation system, and is essentially devoid of vegetation. No surface waters or wetlands occur on the site, nor are there any reported private water wells in the immediate area. A wetland associated with a small stream is located approximately two-hundred feet south of the southern site border.

SECTION 3.0 FIELD INVESTIGATIONS AND LABORATORY ANALYSIS RESULTS

3.1 Field Activities

From December 13, through December 16, 1988, six underground storage tanks were removed from the subsurface. During these operations, representatives of the Vermont Department of Environmental Conservation (DEC) were present on site. During the course of these activities, floating product was observed in one of the tank holes. As a result, Star Enterprise, as agent for Texaco Refining and Marketing Inc., under Order No. 7-8811, was required to hire a qualified consultant and prepare and implement product recovery. According to the referenced Order, product recovery would be required until all free-floating product was removed from the site. On December 19, 1988, a thirty-six inch recovery well was installed to a depth of thirteen feet along the south side of the former tank pit. The recovery well was equipped with a Scavenger pump for the purpose of withdrawing product from the surface of the groundwater table. Extracted product was then directed to a two-thousand gallon separator tank housed approximately thirty feet distant of the recovery well. The discharge from the bottom of the separator was then pumped through a sediment filter, to remove turbidity, and through dual-carbon canisters



for the purpose of removing volatile organic compounds. During the dewatering of the tank pit and during tank installation, daily samples of the influent waters directed into the treatment system, and in-line, and effluent readings from the dual carbon units were taken. Samples were obtained weekly and analyzed according to EPA Method 602, modified by adding a polar column to allow for quantification of C1 to C14 aliphatics. In addition, the treated groundwater discharge was limited to 30,000 gallons per day. Following removal and installation of the tanks, recovery operations continued as did weekly sampling of the system's influent, midpoint and effluent to the current date.

Monthly monitoring of site's five monitoring wells (CEA-1, CEA-2, CEA-4, CEA-5, CEA-6) and the recovery well was initiated on March 16, 1989. The purpose of the monitoring and well gauging activities was to determine the continued presence of floating phase product and to identify dissolved phase levels within the site area. During this sampling event, no floating phase product was identified within any of the site's wells or the recovery well. However, well CEA-1, located to the south of and downgradient of the tank grave could not be located due to construction activities during the remedial



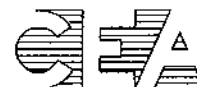


system installation. Therefore, conclusive evidence could not be established as to the removal of all floating phase product from the site.

On April 13, 1989, monthly sampling and gauging of the entire site's monitoring and recovery wells was again attempted.

During this sampling event, all wells and the recovery well were located with the aid of a ferromagnetic detector. Well gauging indicated the absence of any floating phase contamination across the site.

A review of dissolved phase levels (BTEX) within the monitoring wells and the recovery well for March 16 indicated wells CEA-5, and CEA-6 absent of detectable contaminant levels with CEA-2 containing 70 ppb. Dissolved phase levels within the recovery well and CEA-4 contained 175 ppb and 1880 ppb, respectively, for this same sampling period. The April 13 increase in dissolved phase levels for these two wells, i.e., 3351 ppb for CEA-4 and 9115 ppb for the recovery well, can possibly be attributed to a rise in groundwater levels, thereby inundating previously suspended contaminant, and the sampling of the recovery well occurring in varying phases of the pump cycling event. During the April 13 sampling event, nondetectable levels of purgeable aromatics were identified within well CEA-1, which is situated downgradient of the former tank area. In addition, detectable levels of contaminant were not identified in the remaining wells on-site. As previously



stated, weekly monitoring of the system's influent, midpoint, and effluent have continued since the removal and installation of new tanks. Following are graphs depicting system influent BTEX and C1-C14 values. As both graphs indicate, dissolved phase contamination within the recovery well's influent has decreased significantly since system startup.

SECTION 4.0 CONCLUSIONS

Monthly gauging of all on-site monitoring wells and the recovery well over the previous two month period indicates the absence of floating phase contamination across the site.

In addition, dissolved phase contaminants within the recovery well influent have shown a dramatic decrease relative to initial system startup values. This decrease, and analytical results of dissolved phase contaminants within the site's groundwaters, indicate a majority of the contamination has been removed. Therefore, based primarily on the absence of floating phase contamination within any of the site's monitoring wells or recovery well over the past two month period, a request is being made to terminate remedial operations on the site and removed associated equipment. In addition, a recommendation is made to continue quarterly sampling and gauging of all on-site monitoring wells and the recovery well over a one (1) year period. All gauging and analytical results will be forwarded to the Department of Environmental Conservation.

CERTIFICATION STATEMENT

It is hereby certified that the methodologies, techniques and findings of this technical report have been conducted in accordance with relevant environmental regulations, applicable professional standards and prudent engineering practices and that the information, attached documents and data are true, accurate and complete to the best of our knowledge.

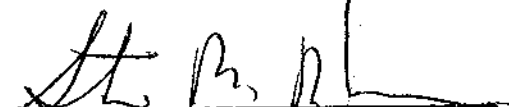
CORPORATE ENVIRONMENTAL ADVISORS, INC.
453 Center Street
Ludlow, MA 01056
(413) 589-0548



William T. Andrews
Director, Site Assessments & Remediation



Gary P. Alicandro
President
Certified Hazardous Materials
Engineer



Steven Migridichian
Vice President
Principal Hydrogeologist

Date: April 27, 1989

CEA Ref. File #2724-88-0810



CORPORATE ENVIRONMENTAL ADVISORS, INC.

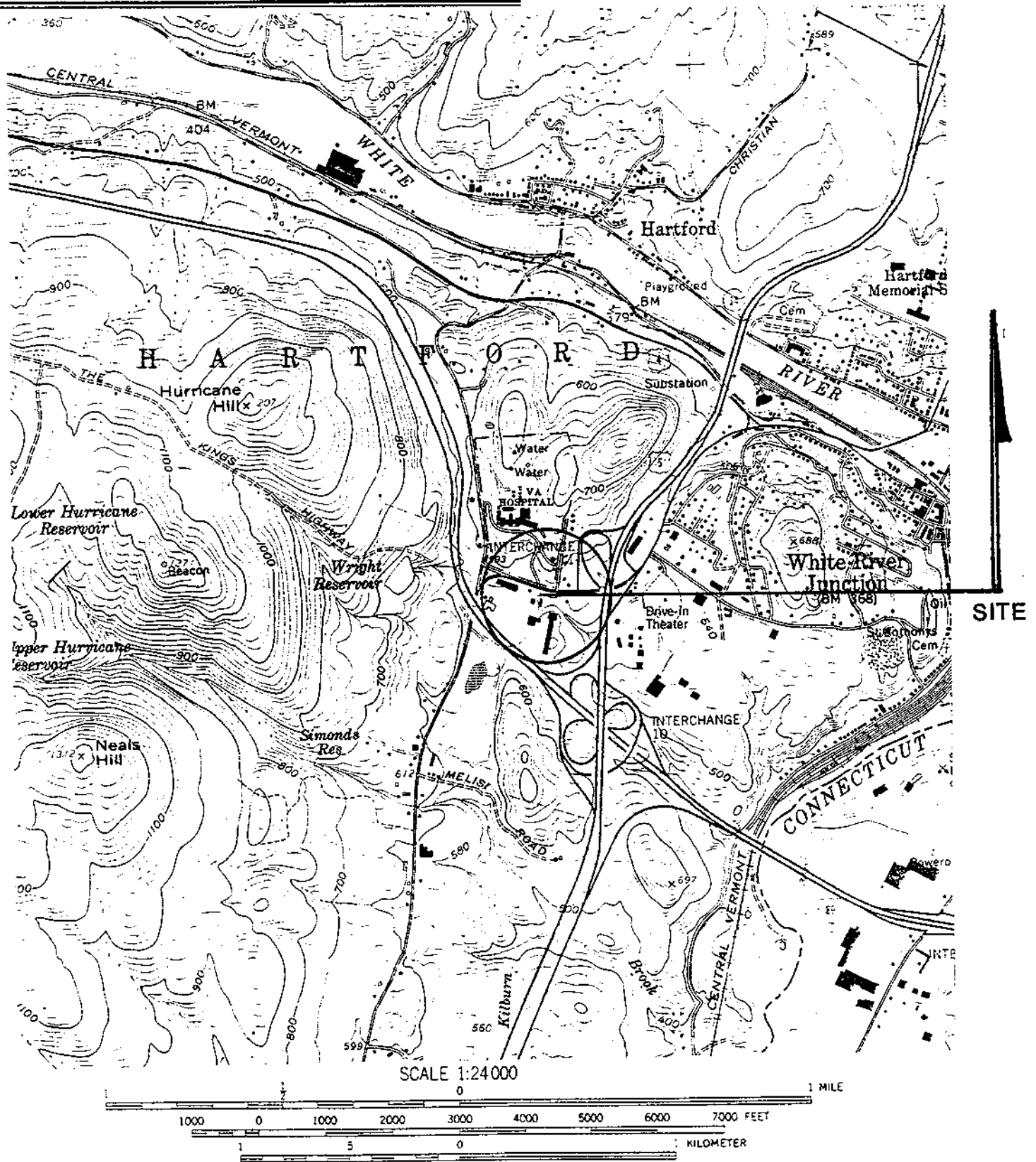


FIGURE 1
SITE LOCUS

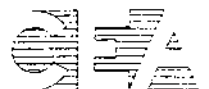
HARTFORD, N. H.-VT.

N4337.5—W7215/7.5

1959
PHOTOREVISED 1980
DMA 6571 III NE-SERIES V813

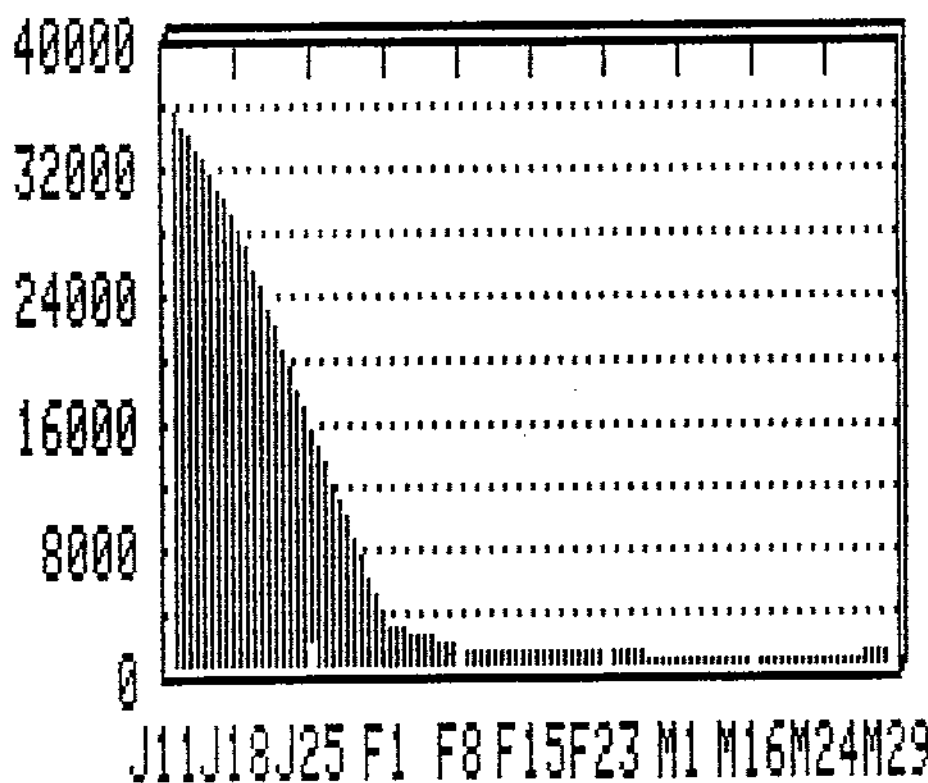


QUADRANGLE LOCATION



TEXACO
WHITE RIVER JCT., VT

CONCENTRATION (PPB)

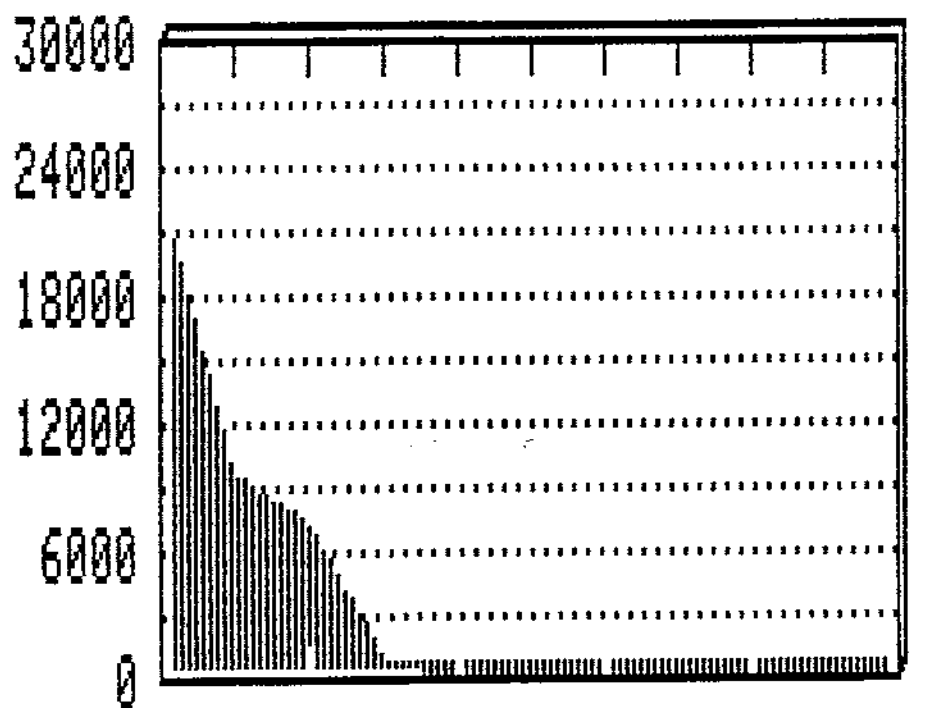


JAN. THROUGH MAR. 1989

TOTAL DISSOLVED
HYDROCARBONS

TEXACO
WHITE RIVER JCT., VT

CONCENTRATION (PPB)



J11J18J25 F1 F8 F15F23 M1 M16M24M29

JAN. THROUGH MAR. 1989

TOTAL BTEX

PERMITTEE Texaco Refining & Marketing
 Address: Route 5
White River Junction, VT
 Phone: _____

PERMIT NO. 7-8811
 S/N _____
 PERMIT MONITORING INFORMATION

MONTH January 19 89 Page 1 of 1

Date	Influent ppb				EFFLUENT ppb														SIZE AND TYPE OF PRIMARY FLOW DEVICE						
	Total Dissolved Hydro	CEA-1	BTEX	GPD Discharge	Total Dissolved Hydro	CEA-3	BTEX																		
1																									
2																									
3																									
4																									
5																									
6																									
7																									
8																									
9																									
10																									
11	37000		23000			BY		ND																	
12																									
13																									
14																									
15																									
16																									
17				2311																					
18	29000		10000	849		370		0.7																	
19				2225																					
20				2225																					
21				350																					
22				5070																					
23				2430																					
24				875																					
25	16000		700	325		0.3		0.3																	
26				2000																					
27				1200																					
28				3300																					
29				3340																					
30																									
31																									
TOTAL																									
AVE																									
MAX																									
MIN																									

FLOW CHECKS INFLUENT ☐ EFFLUENT ☐
 DATE HEAD ACTUAL FLOW CHART FLOW (ACTUAL - CHART) X 100 = % ERROR
 INCHES MGD MGD MGD ACTUAL

FACTORY CALIBRATION DATE: _____
 BY WHOM: _____
 COMMENT AND EXPLANATION OF ANY VIOLATIONS
 (Reference all attachments here)

Prepared by: _____
 I CERTIFY UNDER PENALTY OF LAW THAT I HAVE PERSONALLY EXAMINED AND AM FAMILIAR WITH THE INFORMATION SUBMITTED HEREIN. BASED ON MY INQUIRY OF THOSE INDIVIDUALS IMMEDIATELY RESPONSIBLE FOR OBTAINING THE INFORMATION, I BELIEVE THE SUBMITTED INFORMATION IS TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT.

Approved by: _____
 (Authorized Agent for Permittee)

PERMITTEE Texaco Refining & Marketing
 Address: Route 5
White River Jct, Vermont
 Phone: _____

PERMIT NO. 7-8811
 S/N _____
 PERMIT MONITORING INFORMATION

MONTH February 19 89 Page 1 of 1

Date	Influent				EFFLUENT																	SIZE AND TYPE OF PRIMARY FLOW DEVICE							
	Total Dissolved Hydro.	CEA-1	BTEX	GPD Discharge	Total Dissolv. Hydro	CEA-3	BTEX	ppb																	FLOW CHECKS				
								10	11	12	13	14	15	16	17	18	DATE	HEAD INCHES	ACTUAL FLOW MGD	CHART FLOW MGD	(ACTUAL - CHART) ACTUAL X100 = % ERROR								
1	3500		1400	3300	0.3		0.3																						
2				5000																									
3				2200																									
4				2700																									
5				2700																									
6				2700																									
7				3000																									
8	2300		570	2300	0.2		0.2																						
9				500																									
10				900																									
11				4900																									
12				2400																									
13				2100																									
14				2100																									
15	2000		450	2100	0.2		0.2																						
16				2300																									
17				800																									
18				700																									
19				600																									
20				8100																									
21				2400																									
22				3200																									
23	1990		450	3200	0.2		0.2																						
24				3200																									
25				3200																									
26				3300																									
27				3100																									
28				2900																									
29																													
30																													
31																													
TOTAL																													
AVE.																													
MAX.																													
MIN																													

Prepared by

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PERMITTEE Texaco Refining & Marketing Co.
 Address: Route 5
White River Jct, VT
 Phone: _____

PERMIT NO. 7-8811
 S/N _____
 PERMIT MONITORING INFORMATION

MONTH March 19 89 Page of

Date	Influent (ppb)				EFFLUENT (ppb)														SIZE AND TYPE OF PRIMARY FLOW DEVICE				
	Total Dissolved Hydro.	CEA-1	BTEX	GPD Discharge	Total Dissolv. Hydro.	CEA-3	BTEX	10	11	12	13	14	15	16	17	18	FLOW CHECKS INFLUENT <input type="checkbox"/> EFFLUENT <input type="checkbox"/>						
																	DATE	HEAD INCHES	ACTUAL FLOW MGD	CHART FLOW MGD	(ACTUAL-CHART) ACTUAL X100 = % ERROR		
1	1300		290	3700	BDL		ND																
2				4100																			
3				2900																			
4				3900																			
5				4100																			
6				2900																			
7				2400																			
8	System not operating				line frozen																		
9				2600																			
10				3500																			
11				4100																			
12				3700																			
13				2800																			
14				2900																			
15				2800																			
16	1700		560	3100	BDL		ND																
17				3100																			
18				2100																			
19				2100																			
20				750																			
21				1400																			
22				2900																			
23				3100																			
24	1200		390	3200	BDL		BDL																
25				3100																			
26				2900																			
27				2800																			
28				2800																			
29	2300		780		BDL		BDL																
30																							
31																							
TOTAL																							
AVE																							
MAX																							
MIN																							

FACTORY CALIBRATION DATE:

BY WHOM:

COMMENT AND EXPLANATION OF ANY VIOLATIONS
 (Reference all attachments here)

Prepared by _____

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Approved by _____

(Authorized Agent for Permittee)

WHITE AND YELLOW COPIES TO STATE

PINK COPY TO PERMITTEE

TABLE I
PURGEABLE AROMATICS

WHITE RIVER JUNCTION, VERMONT SERVICE STATION GROUNDWATER SAMPLES
ANALYSIS BY TEXACO PORT ARTHUR RESEARCH LABS

SAMPLE DESCRIPTION	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
CEA-2	70	ND	ND	ND
CEA-4	1130	270	10	470
CEA-5	ND	ND	ND	ND
CEA-6	ND	ND	ND	ND
RW	12	13	ND	150
INF	80	70	ND	410
Eff.	ND	ND	ND	ND
Mid	4	7	ND	53

All values are in ug/L.

ND - not detected (method quantitation limit of 1 ug/L).

BTEX analysis of aqueous samples by EPA Method 602 for Purgeable Aromatics (Purge-and-Trap, Gas Chromatography) from EPA-600/4-82-057 ("Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater").

SAMPLE COLLECTION AND ANALYSIS INFORMATION

Sampling site:	Texaco Service Station White River Junction, Vermont
Sample collector:	Corporate Environmental Advisors, Inc. 453 Center Street Ludlow, Massachusetts 01056
Sample collection date :	March 16, 1988
Sample shipment date:	March 16, 1989
Sample arrival date:	March 17, 1989
Sample analysis date:	March 22, 1989

RBB-TSH

-2-

4-21-89

TABLE I

PURGEABLE AROMATICS

WHITE RIVER JUNCTION, VERMONT SERVICE STATION GROUNDWATER SAMPLES
ANALYSIS BY TEXACO PORT ARTHUR RESEARCH LABS

SAMPLE DESCRIPTION	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES
CEA-1	ND	ND	ND	ND
CEA-2	ND	ND	ND	ND
CEA-4	1490	1990	11	1740
CEA-5	ND	ND	ND	ND
CEA-6	ND	ND	ND	ND
RECOVERY WELL	650	2540	210	5890

All values are in ug/L.

ND - not detected (method quantitation limit of 1 ug/L).

BTEX analysis of aqueous samples by EPA Method 602 for Purgeable Aromatics (Purge-and-Trap, Gas Chromatography) from EPA-600/4-82-057 ("Methods For Organic Chemical Analysis of Municipal and Industrial Wastewater").

SAMPLE COLLECTION AND ANALYSIS INFORMATION

Sampling Site: Texaco Service Station
White River Junction, Vermont

Sample Collector: Ms. Stephanie Spolzino
Corporate Environmental Advisors, Inc.
453 Center Street
Ludlow, Massachusetts 01056

Sample Collection Date : April 13, 1988

Sample Shipment Date: April 13, 1989

Sample Arrival (at PARL) Date: April 14, 1989

Sample Analysis (by PARL) Date: April 19, 1989

SHEET
No. _____
of _____

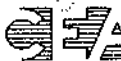
[illegible]

CHAIN OF CUSTODY RECORD

SHEET
No. _____
of _____

PROJ. NO. 2724-88		PROJECT NAME Texaco		Sample Matrix	ANALYSIS TYPE REQUESTED												
Samplers Stephane Spohn		STATION LOCATION			No. of Containers	REMARKS											
I.D. NUMBER	DATE	TIME	C O M P.	G R A B													
CEA-1	4/13/89		✓		White River St, VT	H ₂ O	3									M-H	
CEA-2	4/13/89		✓		↓		3									M-H	
CEA-4	4/13/89		✓				3										M-H
CEA-5	4/13/89		✓				3										med
CEA-6	4/13/89		✓				3										med
RECO			✓				3										M-H
* Please include C ₁ - C ₁₄ Aliphatics																	

Relinquished by: (Signature) Stephane Spohn	Date/Time 4/13/89 5pm	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)



CORPORATE ENVIRONMENTAL ADVISORS, INC.
 453 Center Street, Ludlow, Massachusetts 01056
 (413) 589-0548 FAX (413) 583-5283

TO: P.A.R.L.

PROJECT MANAGER: *Bill Andrews*

WHITE — File copy

YELLOW — Laboratory copy

PINK — Verification copy

$\frac{1}{2}$	<u>.04</u>	$2\frac{1}{2}$	<u>.21</u>	$4\frac{1}{2}$	<u>.37</u>	$6\frac{1}{2}$	<u>.54</u>	$8\frac{1}{2}$	<u>.70</u>	$10\frac{1}{2}$	<u>.87</u>
1	<u>.08</u>	3	<u>.25</u>	5	<u>.42</u>	7	<u>.58</u>	9	<u>.75</u>	11	<u>.91</u>
$1\frac{1}{2}$	<u>.12</u>	$3\frac{1}{2}$	<u>.29</u>	$5\frac{1}{2}$	<u>.46</u>	$7\frac{1}{2}$	<u>.62</u>	$9\frac{1}{2}$	<u>.79</u>	$11\frac{1}{2}$	<u>.95</u>
2	<u>.16</u>	4	<u>.33</u>	6	<u>.50</u>	8	<u>.66</u>	10	<u>.83</u>		

OBSERVATION WELL GAUGE REPORT

SITE Texaco Service Station DATE April 13, 1989

LOCATION White River Junction, Vermont PROJECT NO. 2724-88

INSPECTOR S. Spolzino INSTRUMENT Interface Probe[illegible]

CONVERSION: INCHES TO FRACTIONAL FEET

$\frac{1}{2}$	<u>.04</u>	$2\frac{1}{2}$	<u>.21</u>	$4\frac{1}{2}$	<u>.37</u>	$6\frac{1}{2}$	<u>.54</u>	$8\frac{1}{2}$	<u>.70</u>	$10\frac{1}{2}$	<u>.87</u>
1	<u>.08</u>	3	<u>.25</u>	5	<u>.42</u>	7	<u>.58</u>	9	<u>.75</u>	11	<u>.91</u>
$1\frac{1}{2}$	<u>.12</u>	$3\frac{1}{2}$	<u>.29</u>	$5\frac{1}{2}$	<u>.46</u>	$7\frac{1}{2}$	<u>.62</u>	$9\frac{1}{2}$	<u>.79</u>	$11\frac{1}{2}$	<u>.95</u>
2	<u>.16</u>	4	<u>.33</u>	6	<u>.50</u>	8	<u>.66</u>	10	<u>.83</u>		

